JFSP Project #15-1-06-9

Codebook

Respondent characteristics

Respondent characteristics include all codes for information about the respondent specifically, including their job title (a code for each position) and descriptions of what they do for their job, what a day on the job is like, etc.

1a. Job description/personal experience "day on the job"

> Descriptive information about the duties of their role, for example, explaining what the responsibilities of an incident commander are, or specifically what being an incident commander is for them. This code is intended to help us learn the roles and responsibilities of different job titles, it is not to examine the role of their personal experience in decision-making.

1b. Tag with title as well: IMET, IC, etc.

> 1b is a stand-in for what will be many tags. Each unique job title should get a code. For example, we may have a code for incident commander, agency administrator, IMET, FBAN, etc. Each one would have its own code under respondent characteristics.

Fire events

Fire events include codes for specifically tagging the type of fire event. Although this code will likely not be informative on its own, how this code correlates with others may be informative.

2a. Pre-fire planning

> Includes pre-season planning, long-term planning for future seasons, and planning right before initial attack.

2b. Initial attack

2c. Extended attack

Models

Codes about models, including weather and fire spread models and DSS.

3a. Model types

> Each model will get a code every time it is mentioned. So there will be a code for FSPro, WFDSS, RAWS, etc.

3b. Constructing models

For capturing the process of building and running models, including data input, adjustment/calibration, etc.

3c. Over/underpredicting

When respondents mention models projecting more or less severe conditions than reality. This may be in error or intentionally, for example, over-predicting to know the worst case scenario.

3d. Confidence in Models

For how reliable and trustworthy people see models, whether they do or do not have confidence in them and why, methods or challenges to improving confidence in models.

3e. Model inaccuracy/limitations

For all instances when models are or could be incorrect. This may be due to modeler error, technological limitations, or inherent uncertainty in models. Respondents may talk about the specific of how models are inaccurate, past experiences where the model was wrong, or the limits of current models, for example to simulate wind.

3f. As communication tools

This code is for when the models themselves are used in the communication process as a tool for communication. The model itself must be integral to how information is presented, for example, highlighting the colors of the fire spread map when trying to describe the fire's path to the public. Models as communication tools is not just using information from models to inform decision-making, or blanket communicating model output.

3g. Explicitly suggested improvements

This code is to be used when respondents make specific suggestions to improve models. Most of the time it will be preceded by the interviewer asking them if they have any recommendations to change the models. Broad statements like "improving the accuracy of wind" would not be sufficient. Recommendations will usually be directed toward one specific model or program, like WindNinja or WFDSS.

3h. Complexity

Complexity under models refers to any reference to an overload or excess of information that is beyond human or model capacity. This would include comments such as that the terrain is too complex to ever be truly modeled accurately, and comments such as that the models can be so detailed and provide so much output that they are too complex for people to understand.

Decision-Making

These codes all relate to the process of decision-making, rather than the factors weighed in a decision. Codes refer to psychological phenomenon and tools in decision-making.

4a. Using models in decision-making

This is for any reference to models and decision-making together. It includes using models, specific instances of when models aren't used, in what way they're used, challenges to using them, etc.

4b. Decision Support Systems

This code is to be used when decision support systems or decision support is explicitly mentioned. WFDSS without a reference to decision support, for example only talking about the fire spread models in WFDSS, would not get coded DSS.

4c. Biases/Heuristics

This code is for any time respondents talk about or exhibit biases or heuristics in decision-making, including but not limited to loss aversion, status quo bias, discounting, etc. Biases and heuristics do not necessarily need to be bad or lead to bad outcomes, but could be any departure from the "rational actor".

4d. Personal experience

This code refers to how personal experience relates to decision-making, rather than descriptions of personal experience as respondent characteristics. This may include things like drawing from previous experience and applying it to the decision context, bringing fire ecology education into decision-making, etc. The personal experience needs to somehow shape how the respondent makes, approaches, or views decisions.

4e. Flexibility/uncertainty

When respondents mention uncertainty or flexibility in a decision context, for example, having contingency plans to compensate for unknowns, shifting tactics when new information emerges, etc.

Decision Factors

Decision factors are specific forces that are considered and traded off when making decisions, rather than tools that affect the decision-making process.

5a. Values at risk (public safety, ecological values, timber, etc.)

This is for any values that may be threatened by the fire. Each value (homes, ecological values, etc.) should not receive a separate code, but all be coded under values.

5b. Cost

For any mention of the financial cost of fighting fires.

5c. Capacity

This code is for considerations of the ability and capacity of a team fighting a fire, for example, whether a Type 3 has enough specialized personnel to handle a fire or if a Type 2 team should be called in.

5d. Political pressure

Political pressure comes from a government official not directly within the land management agency. These officials will usually be elected. Pressure from the agency administrator is not inherently political. However, pressure from the agency administrator because they are concerned about the response from the county commissioner is political pressure. Newspaper and the media are not political pressure.

5e. Resources

Resources refer to tactical equipment, like bulldozers and aerial resources, and personnel, such as hotshot crews or smokejumpers. It does not refer to natural resources, like timber, or watersheds.

5f. Timing

Timing refers to all temporal considerations, for example crews reaching the end of their shift, considerations for time in fire season, etc.

5g. Trigger points

Trigger points are particular combinations of conditions, usually determined ahead of time, that if they occur will cause a significant shift in tactics.

Previous Outcomes

These codes all reference the outcomes of past fires, decisions, etc. These outcomes can be talked about for their own sake or in relation to something else, for example, as a decision factor.

6a. Unnecessary mitigation

Refers to when specific tactical decisions are made knowing they will be ineffective, often due to political or public pressure. It does not refer to the overall trend of aggressive fire suppression and risk aversion. Examples include flying planes or dropping retardant when weather conditions make it unlikely to do anything, and fire managers are aware of that.

6b. Excessive suppression

In comparison, excessive suppression refers to the broader picture of managing too few fires and putting too many fires out too early. It doesn't refer to specific tactical decisions, but to more general trends and management decisions.

6c. Fire use/management

Refers to indirectly attacking, engaging in strategies besides full suppression, reintroducing fire to the landscape, managing fire for resource benefits, etc.

6d. Tragedy

Refers to negative outcomes, usually loss of human life, homes, sense of place or community, etc.

Risk

The risk codes are to be applied whenever the relevant risk domain is mentioned, regardless of context.

7a. Risk to FF

Refers to risks to the physical safety of firefighters, including injury and death.

7b. Risk to career

Refers to risks to careers for fire management personnel, for example, the risk that if something goes wrong they will be blamed and be fired, or they will be unable to advance their career if they do not practice excessive risk aversion, or that they do not feel empowered or rewarded by their agencies to take risks as part of the job.

7c. Risk Management

Refers to the concept of risk management and risk governance- taking risks commensurate with the values at hand (for example, not spending more to save a house than the value of the house) as well as managing for long and short-term risk, using analytics and decision-support, etc.

7d. Desensitization

For any mention of the phenomenon where long-term exposure to a risk makes it seem less risky. For example, heeding red flag warnings less when they've been issued repeatedly, or accepting significant risks to firefighters because they consider being put in excessively risky situations normal.

7e. Risk aversion

Refers to the unwillingness to take risks, whether excessive or not. This could include being unwilling to accept more risk in one domain (e.g., political risk) even if it means accepting more risk in another (e.g., firefighter safety).

Social/group dynamics

These codes all refer to the social dimensions of wildfire management, such as the relationship between people on a team, the role of trust, and social relationships between people in different institutions.

8a. Culture

Culture refers to the norms, habits, and expectations in fire management, for example, references to a culture of being the hero, or a culture of putting out fires. When outcomes or actions are framed as something done due to norms, habit, or expectations, that would be coded as culture.

8b. Interpersonal relationships

Interpersonal relationships can occur between individuals at any level and any agency, but refers specifically to the relationship between specific individuals. The relationships incident commanders have with the agency administrators broadly is not interpersonal relationships, but the incident commander knowing their fire behavior analyst personally is.

8c. Team level social dynamics

Team level social dynamics refer to the fire management or incident management team, for example the modelers and the duty officers, the firefighters on the ground and the operations chief, etc. A team are those involved on one incident together and are there specifically for the fire.

8d. Agency level dynamics

Agency level dynamics occur within the same agency, such as the Forest Service, but across levels of management, such as between the incident management team to the agency administrator, or regional forester.

8e. Between agencies dynamics

Between agency dynamics happen between different agencies, for example, The Forest Service and the state public lands agency. Agencies in this case include government bodies such as public land management agencies, law enforcement, and local governments, but do not include political pressure, which tends to be exerted by specific elected officials.

8f. Public perception/trust

Refers to all the social dynamics regarding public perception of fire management, fire events, etc. and their trust in managers, agencies, firefighters, etc. The media and special interest groups such as hunters or recreationalists fall under public perception and trust.

Communication

9a. Meetings/briefings

To be used whenever a meeting or briefing is discussed, especially when the purpose/goals/consequences of the meeting are discussed.

9b. Between agencies

Refers to any communication between individuals of different government agencies, or agency to agency communication. Agencies in this case include government bodies such as public land management agencies, law enforcement, and local governments, but do not include politicians.

9c. To public/media

Refers to any communication intended or directed towards the public or media outlets. Special interests groups such as recreationalists and hunters include the public.

9d. To politicians

Refers to any communication to elected officials or politicians, for example, state officials, county commissioners, etc.

9e. Between command levels

Refers to communication within the same agency but across different levels of authority/responsibility, for example, incident commanders and agency administrators, firefighters and operations chiefs, etc.

9f. Modeler to decision-maker

This is a specific form of communication between levels that refers to any communication between a modeler and someone in the agency with decision-making authority, such as an agency administrator, incident commander, or operations chief.

9g. Challenges

Refers to any roadblocks or challenges to communicating, including different levels of expertise, poor communication skills, limited time, etc. The subjects communicating should still be coded, for example, modeler to decision-maker.

Other codes

10. Paragon

For marking particularly noteworthy, or well-worded quotes. Will always be an additional code, and never a standalone code.

11. 2 respondents
    a. First
    b. Second

For use on the interviews with 2 respondents to be able to separate out who said phrases with which codes.

12. Flag for discussion

For any paragraph or phrase that is unclear, ambiguous, or troubling that should be discussed during intercoder reliability checks.

Codes abbreviated

1. Respondent characteristics
    a. Job description/personal experience “day on the job”
    b. Tag with title as well: IMET, IC, etc.

2. Fire events
    a. Pre-fire planning
    b. Initial attack
    c. Extended attack

3. Models
    a. Model types
        i. Listed out. Includes RAWS.
    b. Constructing models
    c. Over/underpredicting
    d. Confidence
    e. Model inaccuracy/limitations
    f. As communication tools
    g. Explicitly suggested improvements
    h. Complexity

4. Decision-making
    a. Using models in DM
    b. DSS
    c. Biases/Heuristics (loss aversion, status quo bias, etc. Should be departure from rational actor but doesn’t necessarily need to be bad)
    d. Personal experience (individual level characteristics)
    e. Flexibility/uncertainty

5. Decision Factors
    a. Values at risk (public safety, ecological values, timber, etc.)
    b. Cost
    c. Capacity
    d. Political pressure
    e. Resources
    f. Timing
    g. Trigger points

6. Previous Outcomes
    a. Unnecessary mitigation (specifically tactics)
    b. Excessive suppression
    c. Fire use/management
    d. Tragedy

7. Risk
    a. Risk to FF
    b. Risk to career
    c. Risk Management
    d. Desensitization
    e. Risk aversion

8. Social/group dynamics
    a. Culture
    b. Interpersonal relationships
    c. Team level social dynamics
    d. Agency level dynamics
    e. Between agencies dynamics
    f. Public perception/trust

9. Communication
    a. Meetings/briefings (nest outside communication?)
    b. Between agencies
    c. To public/media
    d. To government/politician
    e. Between command levels
    f. Mod2DM (or make it between command levels?)
    g. Challenges

10. Paragon

11. 2 respondents
    a. First
    b. Second

12. Flag for discussion